CLINICAL PRACTICE GUIDELINE

Childbirth and Mental Illness Clinic (CAMI)

This document should be read in conjunction with the Disclaimer

Contents

Aims

To improve obstetric and neonatal outcomes for women with a diagnosed severe mental illness by:

- utilising a multidisciplinary team approach as recommended by the NHMRC Antenatal Care guidelines
- small identified team providing individualised comprehensive continuity of care
- management of psychotropic medications and potential effects in pregnancy and postpartum
- increasing the rate of attendance to antenatal services
- monitor closely for obstetric complications
- liaison with psychiatric, obstetric and primary care providers
- planning for birth and postnatal support

Key points

1. Women attending the CAMI clinic require routine antenatal care. Additionally specific vigilance for obstetric and psychosocial complications is required, entailing detailed information about medical, physical, psychiatric, social, history of drug and alcohol use, and current and recent medication history.
2. Women attending the CAMI clinic should be provided with additional information regarding:
    - Psychotropic medications in pregnancy
    - relative risks of relapse of their disorder in pregnancy and postpartum
    - nutrition and dietary requirements
    - psychosocial supports
3. Discharge planning and documentation commences at the first visit.
4. Women are informed the proposed postnatal stay is 5 days to allow monitoring of the mental state and assist parenting.
5. Women attending the CAMI clinic should not be discharged from hospital prior to being seen by the psychiatrist and the social worker.

Criteria for CAMI referral

- Chronic psychotic disorders such as schizophrenia
- Severe mood disorders e.g. Bipolar Affective Disorders or recurrent major depression with a history of psychiatric hospitalisation
- Past history of postpartum psychosis
- Severe non-psychotic disorders with significant impairment to functioning and/or complex care (discussed with the CAMI team).

Referral process

Antenatal referrals are received by:

- Clinical Referral Co-ordinator for the antenatal clinic at KEMH
- Department of psychological medicine, and then forwarded to the CAMI clinic.

All referrals are triaged in the CAMI clinic. Women triaged to the CAMI clinic will be given appointments and registered with the Department of Psychological Medicine under the CAMI clinic program.

Referrals for women who do not meet the criteria to attend the CAMI clinic are sent to the Clinical Referral Co-ordinator who arrange appointments at other obstetric clinics.

	PROCEDURE	ADDITIONAL INFORMATION
1	**Initial assessment and triage**	
	Conduct the booking visit and follow up antenatal visits as for all pregnant women attending KEMH. See Clinical Guidelines: Obstetrics and Gynaecology: Antenatal Care Schedule The timing of the booking visit will be determined following CAMI review. The first visit may be as early as 12 weeks gestation depending on individual clinical circumstances.	Women with severe mental illness (SMI) may present later in their pregnancy than other women. [1] Poor or late attendance may be due to unplanned pregnancy, previous poor experiences with health services, and lifestyle issues.[2] Fear of statutory involvement includes fear of a child being placed in care.
2	**Medical history and physical assessment**	
2.1	General medical health	Women who have a SMI may be at greater risk of metabolic complications in pregnancy e.g. diabetes, obesity and hypertension.[3] Psychotropic medication may have an impact on general medical disorders e.g. lithium is associated with thyroid dysfunction[4], and antipsychotics and cardiac effects[5].
2.2	Sexually transmitted infections (STIs) / cervical screening test	Women with SMI may be at greater risk of STIs[6] and may be less likely to receive regular cervical screening and should therefore be fully investigated.

	PROCEDURE	ADDITIONAL INFORMATION
2.3	Drug and alcohol screening Refer to Women and Newborn Drug and Alcohol Service (WANDAS) for consultation if substance misuse is an issue	Women with SMI are at increased risk of smoking, alcohol and substance abuse.[3] Counselling should be offered in regard to smoking and alcohol use.
3.	**Complications** Women with SMI have increased rates of pregnancy and birth complications.[3, 7]	
4	**Mental health history**	
4.1	All CAMI women on initial assessment will be reviewed by the psychiatric team.	A history of diagnosis, hospitalisations, and medication use, including during the first trimester exposure is documented.
4.2	Liaise with the Community treating team / case manager / Private Psychiatrist.	
4.3	Conduct an individualised risk / benefit analysis e.g. information regarding the safety data for medication in both pregnancy and breastfeeding. Discuss the relative risks of relapse of their disorder and the possible consequences of a relapse of their disorder in pregnancy and postpartum.	Assess information about the use of mood stabilisers in pregnancy and fetal effects.[8, 9] See also KEMH Psychological Medicine guideline: The Use of Psychotropic Medication in Pregnancy and 'Useful resources' section at end of guideline for fact sheets/articles.
4.4	Provide information to woman about antenatal support groups.	
4.5	Discuss with the woman the role of the Mother and Baby unit (MBU). If transfer to the MBU postpartum is being considered, provide the woman with a brochure and arrange a tour of the unit. Liaise with the MBU in high risk cases.	Women with SMI are at increased risk of psychiatric relapse postpartum.[10, 11]
5	**Social assessment**	
5.1	Refer women to Social Work according to their criteria. See Clinical Guideline Social Work Working with Obstetric Patients-Social Work and Social Work Referral	All women attending CAMI clinic will have their case discussed with the social worker. Women will be offered an

	PROCEDURE	ADDITIONAL INFORMATION
	form. In addition refer: • women with schizophrenia • primigravid women • women with no support network	assessment by the social worker at the booking visit if she meets the criteria. Follow up visits with the social worker in on an individual basis.
5.2	Child protection: • any woman who is assessed may require involvement with the Department for Child Protection (DCP). The social worker will discuss this with the CAMI team as well as the Head of the Social Work Department. • should the case already be open or opened as a result of a referral made by KEMH to CPFS the pre-birth planning process needs to commence as soon as possible • Complex care planning will be documented regarding the antenatal and postnatal management of women with complex psycho-social circumstances.	Women with SMI have significantly higher rates of DCP involvement, and women with schizophrenia are less likely to have care of their children.[2] See: Reciprocal Child Protection procedures between KEMH and DCP 2007. Housing situation – SMI women are at risk for homelessness. Partner and supports – women with schizophrenia may have higher rates of being single and less likely to be supported in their pregnancy.[2] Data collaborated from the CAMI clinic has shown women with SMI are more likely to have a partner who is suffering a SMI.
5.3	At the earliest opportunity complete screening for Family and Domestic Violence (FDV).	Women with SMI are at increased risk of FDV.[2]

6 Current pregnancy

6.1 Ultrasounds

	Ultrasounds are individualised according to risk factors, such as medication exposure in the first trimester and fetal wellbeing. Consider: • First trimester screen • Anatomy scan • Fetal growth and wellbeing	Women with SMI should be referred to the KEMH CAMI clinic for early pregnancy care. Women with SMI may have been exposed to medication in the first trimester. This has been associated with increased fetal abnormalities e.g. mood stabiliser, lithium[9, 12, 13]. As such a tertiary level quality ultrasound should be arranged. Antipsychotic medication exposure

	PROCEDURE	ADDITIONAL INFORMATION
		during pregnancy may be associated with abnormalities in fetal growth.[14]
6.2	**Blood investigations**	
	Routine antenatal screening tests include consideration for:	
	• B12, folate • Ferritin	Alcohol, drug and medication use may lead to the deficiency of essential vitamins[15] which can be exacerbated by poor nutrition. Nutritional deficiency may increase risk of depression.[16] Anorexia or eating disorders in pregnancy can lead to nutritional deficiency.
	• Vitamin D	Vitamin D is reduced in women with SMI[17] and the risk can be exacerbated by women with increased BMI[18].
	• Thyroid Function Test	Thyroid dysfunction may be an aggravating factor to mental illness in pregnancy.[19] Antipsychotic medication e.g. lithium may precipitate abnormal thyroid function.[4]
	• Glucose Tolerance Test • Fasting Blood Sugar Level (BSL) at booking.	Women with SMI may be more at risk of metabolic disorders[20]. Antipsychotic medication has the potential to increase the risk of abnormal glucose metabolism,[21] and has been linked with an increased risk of gestational diabetes mellitus (GDM).
	• Lithium levels each trimester, then weekly if possible from 36 weeks gestation.	Lithium levels should be monitored frequently in pregnancy and the level maintained around 0.5mmol/L. Aim for tapering of lithium levels prior to birth.[22] Refer to the KEMH Bipolar management protocol. This will be placed in the front of the patient's medical record notes where appropriate.
	• Urea and electrolytes (U&Es)	Medications are metabolised through

	PROCEDURE	ADDITIONAL INFORMATION
	• Liver function tests (LFTs)	the liver and kidneys and these may need monitoring during pregnancy.
	• Electrocardiogram (ECG)	Antipsychotics, lithium and some antidepressant medication at increased doses can affect the conduction of the heart. An ECG should be performed.[23]
7	**Nutritional advice**	
7.1	Assess the BMI at the booking visit. Document the woman's weight each visit, and monitor throughout the pregnancy.	Women with SMI are at risk of increased BMI.[3, 24] Medication used in the treatment of mental disorders can increase appetite and sugar cravings leading to excessive weight gain.[20]
7.2	Arrange dietician review for women with: • increased BMI • low BMI • increased weight gain due to medication • positive GTT Consider dietician review in all women taking antipsychotic medication.	
8	**Parent education**	
	Additional information is given about: • medications and breastfeeding • blood borne viruses • effects of drug, alcohol misuse and smoking • risk behaviours, consequences and increased surveillance as deemed necessary • extended hospital stay of 5 days • management and frequency of ongoing antenatal care • postnatal support services	Women with SMI are at increased risk of postpartum relapse[10] and as such require close monitoring in the immediate postpartum period. Neonates are at risk of Neonatal Discontinuation Syndrome and may have increased need for Special Care Nursery.[3]
9	**Provision of written information**	

	PROCEDURE	ADDITIONAL INFORMATION
	At the booking visit, women will be provided with the leaflet 'Childbirth and Mental Illness Antenatal Clinic (CAMI)'.	
10	**Referrals**	
	• Contraception	Contraception is discussed with all women at the 36 week antenatal visit. Some medications may interfere with the use of contraception. Certain contraception may aggravate the woman's mental state. For women requiring an Intrauterine Contraceptive Device (IUD) insertion postpartum, the referral to the Family Planning Clinic should be completed at the 38 week visit.
11	**Management plan**	
11.1	A psychiatric management plan and checklist MR248 is completed antenatally for all women.	Some women may also need a sensitive birth plan due to a history of childhood sexual abuse (CSA).
11.2	Refer women on an individual basis for 'Complex Care Management Planning'	See Clinical Guideline O&G: Complex Care: Planning for
11.3	Women with Bipolar will have a 'Bipolar Management Plan' filed in their Medical Record notes.	Women with Bipolar may be on medication such as Lithium, which will require special management around time of birth.[22] Patients with Bipolar are at increased risk of relapse postnatally and that risk can be exacerbated by sleep deprivation postpartum.[25]

References

1. Judd F, Komiti A, Sheehan P, Newman L, Castle D, Everall I. Adverse obstetric and neonatal outcomes in women with severe mental illness: to what extent can they be prevented? . **Schizophr Res**. 2014;157:305 -9. Available from: https://www.ncbi.nlm.nih.gov/pubmed/24934903.
2. Miller LJ, Finnerty M. Sexuality, pregnancy, and childrearing among women with schizophrenia-spectrum disorders. **Psychiatric Services**. 1996;47 May(5):502-6.
3. Nguyen TN, Faulkner D, Frayne JS, Allen S, Hauck YL, Rock D, et al. Obstetric and neonatal outcomes of pregnant women with severe mental illness at a specialist antenatal clinic. **Medical**

Journal of Australia. 2012;April 1 (suppl 1):26-31.

4. Khalil RB, Richa S. Thyroid adverse effects of psychotrioic drugs: a review. **clinical Neouropharmacology**. 2011;Nov-Dec 34(6):248-55.
5. De Hert M, Detraux J, van Winkel R, Yu W, Correll CU. Metabolic and cardiovascular adverse effects associated with antipsychotic drugs. **Nat Rev Endocrinol**. 2012;8(2):114-26.
6. Seeman MV, Ross R. Prescribing contraceptives for women with schizophrenia. **Journal of Psychatric Practice**. 2011;July 17(4):258-69.
7. Jablensky AV, Morgan V, Zubrick SR, Bower C, Yellachich LA. Pregnancy, delivery, and neonatal complications in a population cohort of women with schizophrenia and major affective disorders. **The American Journal of Psychiatry**. 2005;162(1):79-91.
8. Cummings C, Stewart M, Stevenson M, Morrow J, Nelson J. Neurodevelopment of childrend exposed in utero to lamotrigine, sodium valproate and carbamazepine. **Archive of Disease in Childhood**. 2011;96(7):643-7.
9. Galbally M, Roberts M, Buist A. Mood stabilizers in pregnancy: a systematic review. **Australian and New Zealand Journal of Psychiatry**. 2010;44(11):967-77.
10. Viguer AC, Tondo L, Koukopoulos AE, Reginaldi D, Lepri B, Baldessarini RJ. Episodes of Mood Disorders in 2,252 Pregnancies and Postpartum Periods. **The American Journal of Psychiatry**. 2011;168(11):1179-85.
11. Harlow BL, Vitonis AF, Sparen P, Cnattingius S, Joffe H, Hultman CM. Incidence of hospitalization for postpartum psychotic and bipolar episodes in women with and without prior prepregannncy or prenatal psychiatric hospitalizations. **Archives of General Psychiatry**. 2007;64(1):42-8.
12. Jentink J, Dolk H, Loane MA, Morris JK, Wellesley D, Garne E, et al. Intrauterine exposure to carbamazepine and specific congenital malformations: systematic review and case-control study. **BMJ**. 2010;341(Dec021):c6581.
13. van der Lugt NM, van de Maat JS, van Kamp IL, Knoppert-van der Klein EA, et al. Fetal, neonatal and developmental outcomes of lithium-exposed pregnancies. **Earley Human Development**. 2011 (Oct 13).
14. Newham JJ, Thomas SH, MacRitchie K, McElhatton PR, McAllister-Williams RH. Birth weights of infants after maternal exposure to typical and atypical antipsychotics: prospective comparison study. **British Journal of Psychiatry**. 2008;192(5):333-7.
15. Edeh J, Toone BK. Antiepileptic therapy, folate deficiency, and psychiatric morbidity: a general practice survey. **Epilepsia**. 1985;26(5):434-40.
16. Bodnar LM, Wisner KL. Nutrition and depression: implications for improving mental health among childbearing-aged women. **Biological Psychiatry**. 2005;Nov 1;58(9):679-85.
17. Berk M, Jacka FN, Williams Lj, Ng F, Dodd S, Pasco JA. Vitamin D insufficiency in an inpatient sample. **Australian and New Zealand Journal of Psychiatry**. 2008;2012/07/23; 42(10):874-8.
18. Bodnar LM, Catov JM, Roberts JM, Simhan HN. Prepregnancy obesity predicts poor vitamin D status in mothers and their neonates. **The Journal of Nutrition**. 2007;Nov;137(11):2437-42.
19. Basraon S, Costantine MM. Mood disorders in pregnant women with thyroid dysfunction. **Clinical Obstetrics and Gynecology**. 2011;54(3):506-14.
20. Jafari S, Fernandez-Enright F, Huang XF. Structural contributions of antipsychotic drugs to their therapeutic profiles and metabolic side effects. **Journal of Neurochemistry**. 2012;120(3):371-84.
21. Buse JB. Metabolic side effects of antipsychotics: focus on hyperglycemia and diabetes. **Journal of Clinical Psychiatry**. 2002;63(Suppl 4):37-41.
22. Newport DJ, Viguera AC, Beach AJ, Ritchie JC, Cohen LS, Stowe ZN. Lithium placental passage and obstetrical outcome:implications for clinical management during late pregnancy. **American Journal of Psychiatry**. 2005;162(11):2162-70.
23. Suvisaari J, Perala J, Saarni SI, Kattainen A, Lonnqvist J, Reunanen A. Coronary heart disease and cardiac conduction abnormalities in persons with psychotic disorders in a general population. **Psychiatry research**. 2010;Jan 30; 175(1-2):126-32.

24. Virk S, Schwartz TL, Jindal S, Nihalani N, Jones N. Psychiatric medication induced obesity: an aetiologic review. **Obes Rev**. 2004;5(3):167-70.
25. Plante DT, Winkelman JW. Sleep disturbance in bipolar disorder: therapeutic implications. **The American Journal of Psychiatry**. 2008;165(7):830-43.

Related WNHS policies, procedures and guidelines

KEMH Guidelines:

- Psychological Medicine guideline: The Use of Psychotropic Medication in Pregnancy
- O&G: Antenatal Care Schedule (initial & subsequent visits); Complex Care: Planning
- Social Work: Working with Obstetric Patients- Social Work and Hub page *(via Intranet)*

Useful resources

Resources

- NHMRC Antenatal Care guidelines (external site)
- Fact sheets: Mother to Baby http://mothertobaby.org/fact-sheets (external site)
- Motherisk http://www.cfpc.ca/Motherisk/ (external site)
- Bumps (Best Use of Medicines in Pregnancy) www.uktis.org (external site)

Form: Social Work Referral form

Patient brochure: Childbirth and Mental Illness Antenatal Clinic (CAMI)

Keywords:	childbirth, mental illness, antenatal, psychiatric illness, psychiatric		
Document owner:	OGID		
Author / Reviewer:	Evidence Based Clinical Guidelines Co-ordinator		
Date first issued:	August 2012		
Reviewed:	Aug 2015; Aug 2018	Next review date:	August 2021
Endorsed by:	MSMSC	Date:	August 2018
NSQHS Standards (v2) applicable:	1 Governance, 4 Medication Safety		

Printed or personally saved electronic copies of this document are considered uncontrolled. Access the current version from the WNHS website.